(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
8 January 2004 (08.01.2004)

PCT

(10) International Publication Number
WO 2004/003200 A1

(51) International Patent Classification[7]: C12N 15/10, C07H 1/06, 1/08

(21) International Application Number: PCT/SE2003/001127

(22) International Filing Date: 26 June 2003 (26.06.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0202074-1 28 June 2002 (28.06.2002) SE
0301034-5 8 April 2003 (08.04.2003) SE

(71) Applicant *(for all designated States except US)*: AMERSHAM BIOSCIENCES AB [SE/SE]; Björkgatan 30, S-751 84 Uppsala (SE).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: GALAEV, Igor, Yu. [RU/SE]; Center for Chemistry and Chemical Engineering, Lund University, P.O. Box 124, S-221 00 Lund (SE). GUSTAVSSON, Per-Erik [SE/SE]; Center for Chemistry and Chemical Engineering, Lund University, P.O. Box 124, S-221 00 Lund (SE). IZUMRUDOV, Vladimir, A. [RU/RU]; Polymer Chemistry Department, Chemical Faculty, Moscow State University, 119899 Moscow (RU). LARSSON, Per-Olof [SE/SE]; Center for Chemistry and Chemical Engineering, Lund University, P.O. Box 124, S-221 00 Lund (SE). WAHLUND, Per-Olof [SE/SE]; Center for Chemistry and Chemical Engineering, Lund University, P.O. Box 124, S-221 00 Lund (SE).

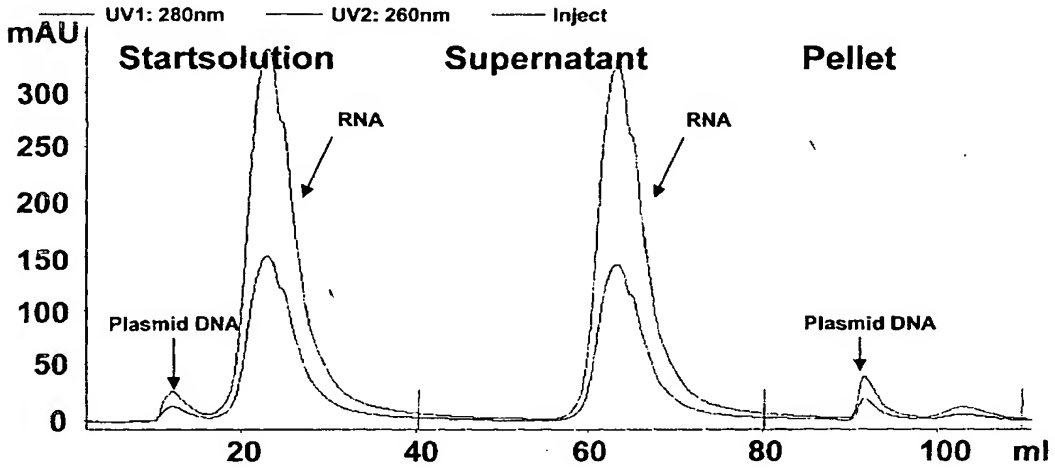
(74) Agents: KILANDER, Annika et al.; Amersham Biosciences AB, Patent Department, Björkgatan 30, S-751 84 Uppsala, Björkgatan 30 (SE).

(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: ISOLATION OF NUCLEIC ACIDS USING A POLYCATIONIC POLYMER AS PRECIPITATION AGENT



(57) Abstract: The present invention relates to a method of isolating a nucleic acid from a biological solution, which method comprises to selectively precipitate the desired nucleic acid by adding a polycationic precipitating agent to the solution and allowing it to form a complex with said nucleic acid, wherein the precipitating agent is a highly charged linear polymer that comprises quaternary amino groups. The polycationic precipitating agent is preferably added in such an amount that the charge ratio [+] / [-] between polycationic precipitating agent and nucleic acid is ≥ 0.5, preferably ≥ 0.9 and most preferably ≥1 during the precipitation, and in the presence of a salt concentration ensuring the quantitative specific precipitation of the nucleic acid/polycation complex.

WO 2004/003200 A1